DOCUMENT RESUME

ED 383 674 SP 036 014

AUTHOR Seda, E. Elliott
TITLE A Taxonomy for Conceptualizing Teaching.
PUB DATE Apr 95
NOTE 75p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 17-22, 1995).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Classification; *Concept Formation; Elementary Secondary Education; Epistemology; Fundamental Concepts; *Instruction; Literature Reviews; Students; Teacher Effectiveness; Teachers; *Teaching (Occupation); Teaching Methods

ABSTRACT

This paper details the development of a taxonomy for conceptualizing teaching. This taxonomy is presented as a means to help educators understand and interpret what it is they do and continue in the process of searching and understanding. The purpose of developing a taxonomy, the basis for the dimensions--or subject matter--for the taxonomy, and the criteria for including or excluding specific dimensions are discussed, using ideas from a number of writers who conceptualize teaching. In developing the taxonomy, four issues are to be considered: (1) quantitative and qualitative bases for the dimensions; (2) criteria for the adequacy and utility of the taxonomy; (3) definitions of descriptors which form the structure for the taxonomy; and (4) reliable classification of the dimensions so that they can be defined objectively and operationally. Four general descriptors--what is teaching, why teach, what is taught and how, and to whom is teaching done--and their underlying dimensions are discussed and systematically arranged, resulting in a taxonomy for conceptualizing teaching. A number of uses for the taxonomy are suggested. The report concludes that all educators, especially those involved in teaching, need to be "expert" as opposed to "novice" thinkers and that if teachers, especially those in elementary, and secondary education, are to be considered professionals, they must make a concerted effort fully to comprehend and explain the activity of teaching. (Contains 136 references.) (ND)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 383 674

A TAXONOMY FOR CONCEPTUALIZING TEACHING

E. Elliott Seda, Ph.D.

Millersville University of PA

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E. E. Seda

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Paper Presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA
April, 1995

SP036014

BEST COPY AVAILABLE

Fleishman and Quaintance (1984) define taxonomy as "[t]he theoretical study of systematic classifications" (p. 22). It includes bases, principles, procedures, and rules. Classification is defined as "the ordering or arrangement of entities into groups or sets on the basis of their relationships, based on observable or inferred properties" (p. 22). "The term taxon is defined as any taxonomic grouping that occurs as the result of a particular technique of classifying: it is used to designate a set of objects recognized as a group in a classificatory system" (p. 21). In addition, Fleishman and Quaintance state that the result of an explicit methodology, in turn, results in a taxon that is arrived at by a classificatory system or a set of categories. A classificatory system, as a set of categories or taxa (the plural of taxon), is the final result of the process of classification. Finally, Fleishman and Quaintance also define units as objects and entities that belong to one or more taxa which constitute a classificatory system (p. 22). Consequently, units are categorized into a set of taxa. These, as a whole, result in a classificatory system. The way the system is organized and categorized is by classification. Taxonomy, then, is studying the way the classification system is put together by analyzing the bases, principles, and procedures for classification.

Therefore, because Fleishman and Quaintance's writings refer to taxonomies that involve performance, and the emphasis in this research paper involves thinking, some of their concepts on taxonomies have been adapted. In this paper, taxonomy is defined as a systematic classification of dimensions of human thinking. Classification system, when used in this study, is synonymous with taxonomy. The taxonomy is divided into general categories, or taxa, which will be referred to as descriptors. The taxonomy for conceptualizing teaching is composed of four general descriptors which will be explained further on in this chapter. These general descriptors are composed of underlying units which are referred to here as dimensions. The general descriptors are categories, that when taken as a whole with their underlying dimensions (units), result in a unifying, integral system of human thinking, a taxonomy.

A taxonomy, as a systemic classification, provides for each dimension to refer to one or more theoretical and/or philosophical models "that embrace the domain to which the taxonomy is to be applied" (Fleishman and Quaintance, 1984, p. 22). In this paper, the taxonomy is to be applied to the activity of teaching. In addition, Fleishman and Quaintance state:

> The application of a taxonomy to a set of facts or observations results in adding more information to those facts or observations by revealing patterns, enabling predictions, and by giving guidance to various kinds of future actions. The taxonomic system also

> operates as a code for accessing organized information. (1984, p. 22)

Here, the taxonomy for conceptualizing teaching directly relates to, and affects the future actions of, the actual practice of teaching.

Taxonomies as such should not be viewed as ends in themselves. They should be used as a means to expand the interpretation of the particular domain for which the taxonomy is being developed. In this case, a taxonomy of teaching should be viewed as a means to help educators understand and interpret what it is that they do, but also to continue in the process of searching and understanding. This is of critical importance, especially in such a complex activity as teaching. Fleishman and Quaintance (1984) state that individuals who attempt classification view this "as tools that might provide the increased ability to interpret, predict, or control some facet of performance" (p. 44).

Three aspects of developing a taxonomy must be considered to substantiate its development: (1) the purpose of developing a taxonomy for conceptualizing teaching, or the purpose of classification; (2) the basis for the dimensions, the appropriate subject matter, and whether the basis involves behaviors or actions to be performed, hypotheses, or required abilities; and (3) the criteria, if any, for inclusion or exclusion of specific dimensions, or, in other words, the method of classification. All three of

these are not easily separated. They are all "inextricably interwoven" (Fleishman and Quaintance, 1984, p. 44) in the development of the taxonomy.

The Purpose of Developing A Taxonomy

There are two main reasons for developing a taxonomy for conceptualizing teaching. Both of these reasons relate to the general purpose of developing a classification system.

First, a taxonomy for conceptualizing teaching contains utilitarian characteristics. Some teachers, especially new ones, may have a difficult time determining how to teach or how to develop specific methods of teaching because they may not really know what it is that they do. Teachers may not fully understand how subject matter is to be treated and/or presented to students if they do not fully understand the relationship between teaching and treating subject matter. A taxonomy for conceptualizing teaching may provide an understanding of this relationship. In addition, the taxonomy has a direct application not only to the practice of teaching or the methodologies of teaching, but to other areas such as classroom atmosphere and lesson planning. There are many teachers who make decisions regarding methods, materials, and/or discipline without basing these decisions on specific foundational and conceptual

principles of teaching. Therefore, the purpose of a taxonomy for conceptualizing teaching is that the dimensions have a utilitarian characteristic that directly results in application of these to the practice of teaching.

Second, developing a taxonomy for conceptualizing teaching leads to even further development of philosophical and/or theoretical thought. A philosophy can lead to a conception or vice versa. One must realize that the application of the dimensions of the taxonomy can lead one to go back to the conception for the purpose of rethinking and changing it. This change may also lead one to rethink the philosophy on which the conception may be based. What may result are different theoretical developments which, in turn, will affect application and practice. When the taxonomy is concerned with the theoretical aspects of teaching, application may be in broad terms rather than in specific utilitarian terms as discussed in the first purpose.

Therefore, as Fleishman and Quaintance (1984) state, the utilitarian purpose of a taxonomy has as its objective to provide rationales for selecting training programs for specific tasks (p. 46). For the taxonomy of teaching, the training programs would refer to, e.g., methods, strategies, and resources. The theoretical purpose of a taxonomy provides for a conceptual framework the elements of which are utilized in interpreting and predicting behavioral

phenomena (Fleishman and Quaintance, 1984, p. 47). "Although one is not precluded from seeking specific applications for such classifications, these applications should not dictate the composition and structure of the system" (p. 47).

The Basis for the Dimensions of the Taxonomy

The basis for the dimensions that are part of the taxonomy refers to the subject matter for which the taxonomy is being developed. Two things are taken into consideration here: (1) what is the task or the subject matter and how is it defined?; and (2) what is the taxonomy and its dimensions based on?

The subject matter, or task, is teaching. Although Fleishman and Quaintance (1984) indicate that a definition of the task for classification is necessary, a variety of definitions for some tasks will undoubtedly be inevitable. This is the case for teaching. Everyone who teaches has a general idea of what teaching is. As a general, broad task for purposes of developing a taxonomy, perhaps it may be said that teaching is something that people do with others. People can be referred to as teachers and others can be referred to as students. This may be sufficient in order to develop the taxonomy, because the taxonomy will eventually

define what it is that teachers do. The general idea of teaching may be diverse and may also be difficult to explain, but even if implicit, it allows one to have a starting point for conceptualizing teaching.

Fleishman and Quaintance (1984) discuss some basic conceptions of classifications that serve as bases for development of taxonomies (pp. 50-55). They indicate that not all classification systems fall neatly into one of these conceptions. In the case of teaching, they all serve as the bases for classifying dimensions of teaching.

One aspect of teaching is based on how it is done. Teaching involves actions or behaviors. Therefore, the dimensions in the taxonomy of teaching are developed based on observations and descriptions of what teachers actually do. In other words, the reference here is on ways of acting in teaching and on overt behavior.

Another aspect is that teaching involves certain abilities. Fleishman and Quaintance call this the "ability requirements approach" (p. 53). Teachers require abilities that enable them to teach. Therefore, the "ability requirements approach" considers as a basis that the dimensions in the taxonomy of teaching can be described, contrasted, and compared as they relate to certain abilities required in teaching.

The "Task Characteristics Approach" (Fleishman and Quaintance, 1984, p. 55) considers the conditions that

result in the thinking and the practice of teaching. Fleishman and Quaintance state that there is an assumption made that the task [in this case, teaching] "can be described and differentiated in terms of intrinsic, objective properties which they may possess" (p. 55). These properties may relate to the goal which a teacher attempts to achieve, to instructions, to procedures, to methods, or to characteristics of responses that result from teaching.

In addition, because of the complexity of teaching and in an effort not to exclude any areas that may serve as bases, in addition to process, function, behavior, and performance, there is also a philosophical orientation which relates to the process of thinking in an abstract form. Therefore, the taxonomy also considers schools of theoretical and philosophical thought as a basis for developing dimensions.

The Criteria for Inclusion and Exclusion of Specific Dimensions

The criteria for inclusion or exclusion of a particular dimension not only relate to the above discussion, but to significant explanations by others who have conceptualized teaching in their writings as to what would merit being considered a dimension. Thus, if several writers, such as Dewey, Green, Rogers, Scheffler, Simon, and others,

considered the same dimensions in their conceptualization of teaching, the indication would be that those dimensions should be included in the taxonomy. Further explanation of the criteria for inclusion and exclusion of specific dimensions continues in the subsection entitled, Quantitative and Qualitative Bases for the Dimensions.

Development of the Taxonomy for Conceptualizing Teaching

After considering the three aspects that substantiate the development of the taxonomy, one must move on to the process of actual classification. Fleishman and Quaintance (1984) discuss four issues that should be taken into consideration when proceeding with classification or when developing a taxonomy. The order of these four issues as presented by Fleishman and Quaintance was changed in this paper. The foundational aspects are discussed first and then the general descriptors and dimensions are defined. The first issue is that the dimensions of the taxonomy may be based on qualitative or quantitative grounds. Here, emphasis is placed on any systems of measurement that were applied to the dimensions "and on the implications they had for the structural and functional characteristics of the resulting classificatory system" (1984, pp. 67-8).

The second issue is that a set of criteria should be

selected and applied for the purpose of assessing the adequacy and utility of the taxonomy. The criteria help to judge the adequacy of the resulting classification system while also providing a format of evaluating its validity for use.

The third issue states that the descriptors which form the basis for the dimensions must be defined and they should relate to the conceptual base of the taxonomy. In defining the descriptors, relevant concepts can be evaluated, reviewed, or translated so as to specify significant attributes that "are likely to differentiate the relevant classes and/or are of some practical concern within the context of the classification attempt" (1984, p. 65).

The fourth and final issue which should be considered when developing a taxonomy is that the dimensions must be classified reliably so that they can be defined objectively and operationally. In order for some form of reliability to exist, the definitions of the dimensions should be objectively and concisely developed. This "will permit clear and consistent distinctions among descriptors ... and among [dimensions]" (p. 66).

The third and fourth areas will be combined and discussed as one section, Definitions of Descriptors and Dimensions. These four areas were used and adapted here as the taxonomy for conceptualizing teaching was developed.

Quantitative and Qualitative Bases for the Dimensions

Fleishman and Quaintance (1984) indicate that "any comprehensive classificatory system for human performance will always be based on some combination of qualitative and quantitative approaches" (p. 82). Although the taxonomy for conceptuatlizing teaching eventually leads to the activity of teaching, a human performance, the taxonomy is primarily related to human thinking. Nevertheless, some quantitative and qualitative aspects were considered in developing the taxonomy especially in relation to the selection of the dimensions.

Fleishman and Quaintance state that to analyze any task situation the following questions should be addressed: "Is some variable present or absent" (p. 82)? If a variable is present, how much of it is present?, and "'On what measurement basis can it be expressed?' Also, if present, 'Does the variable relate to some other variable?' If it does, 'In what way?' and 'What type of quantitative relationships can be expressed" (p. 82)? Some of these questions have been addressed in this section as the quantitative and qualitative bases for the dimensions are discussed.

In considering the quantitative basis for the dimensions, the author of this paper examined the literature to find specific writers that had dealt with the topic,

conceptions of teaching, directly. Thomas F. Green and Israel Scheffler were the primary ones consulted. Their writings revealed that certain specific areas were being considered in discussing conceptions of teaching. As additional writers were examined that dealt with the topic, conceptions of teaching, these same areas were found to be part of their writings. These additional authors included: C. A. Bowers and David J. Flinders, David W. Orr, Carl Rogers, Roger Simon, John Dewey, Paulo Freire, and B. F. Skinner. In addition, while examining literature on philosophy of education, it was also found that these specific areas were given significant attention by the philosophers although in broader terms. Therefore, as additional writers that conceptualize teaching were included in the search, the focus of attention was on the specific areas illustrated in Table 1. Three broad areas, axiology, epistemology, and metaphysics, served as starting points. From these three, there was a branching out to others which resulted in the dimensions used in the taxonomy. Table 1 illustrates all the areas that were considered in selecting dimensions and if the area was or was not considered by a particular writer. In order to simplify the use of terms, values was used instead of axiology, the nature of knowledge instead of epistemology, and reality instead of metaphysics. As Table 1 illustrates, the nature of knowledge, values, definitions, teaching and learning, the role of teachers, and socialization and

TABLE 1
Dimensions for Conceptualizing Teaching
and their Consideration by Writers

	Philosophical Tradition			Psychological Tradition		Sociological Tradition			
Authors	J.D.	T.F.G.	I.S.	C.R.	B.F.S.	P.F.	R.S.	C.A.B. D.J.F.	D.W.O.
Dimensions									
The Definition of Teaching	+	+	+	+	+	+	+	+	+
Metaphors to Describe Teaching		+	+						
Terms Related to Teaching		+							
The Teaching-Learning Relationship		+	+		+				
The Purpose of Teaching									+
The Role of Teachers	+			+	+		+	+	
The Value of Teaching/The Teaching of Values	+			+			+		

(continued on next page)

TABLE 1 (continued)

	J. D.	T. F. G.	I. S.	C. R.	B. F. S.	P. F.	R. S.	C. A. B.	D. J. F.	D. W. O.
The Nature of Knowledge and Subject Matter	+	+	+		+	+	+	+	+	
The Nature of Methods	+									
The Teaching of What is "Real"				+		+	+			
Socialization and Culture						+	+	+		
The Student				+	+					

J. D. = John Dewey
T. F. G. = Thomas F. Green
I. S. = Israel Scheffler
C. R. = Carl Rogers
B. F. S. = B. F. Skinner
P. F. = Paulo Freire
R. S. = Roger Simon
C. A. B. = C. A. Bowers
D. J. F. = David J. Flinders
D. W. O. = David W. Orr

culture were considered by most, if not all, the writers in their conceptions of teaching. While the areas of reality, metaphors, related terms, purposes, the student, and methods were examined by only one or two writers, these were included as dimensions because the analysis of these areas was sufficiently extensive and significant to merit inclusion. In addition, reality, as indicated previously, is important because it is part of philosophy; the student is also important because it completes the triadic relationship of teaching. This is further explained in the section, Definitions of Descriptors and Dimensions. Methods, or methodology, is how subject matter, another element in the triadic relationship, is treated in teaching. Related terms in teaching were important to include because they help to distinguish what teaching is from other things. It is interesting to note that other writers did not specifically address this dimension or make similarities and/or differences between teaching, and, for example, instructing. Finally, language, or the use of language, an area discussed by some of the writers, was not included in the taxonomy because the discussion of language is subsumed in the dimensions of metaphors and related terms.

In reference to the qualitative basis, the section, The Criteria for Inclusion and Exclusion of Dimensions, discussed how the selecting of dimensions depended not only on which writers discussed certain dimensions, but to what

extent their discussions provided significant explanations to fully understand these dimensions. More specifically, the criteria are actually expressed in the questions that are posed for each dimension and that should be addressed as one conceptualizes teaching. The dimensions were examined not only for the quantity of coverage by the writers, but for the quality of their discussions. This latter point helped to establish the basic premise of each dimension which, in turn, provided the criteria in the form of questions. When the terms extensive and significant are used to refer to how the dimensions are explained, what is meant is how the writers presented their viewpoints implicitly, but preferrably clearly and explicitly. Therefore, the following points served to reinforce the qualitative basis for the criteria of the dimensions in reference to selecting dimensions for their extensiveness and significance:

1. When specific terms were used or referred to these had to be clearly defined with rationales to substantiate the definitions.

2. Explanations of the definitions, the positions, and/or the viewpoints had to be provided in the form of examples.

3. Explanations, rationales, evidences, and examples had to be specific to show how the dimensions were part of teaching.

4. If applicable, there should have been examples to illustrate how the dimensions are distinguished from something other than teaching.

5. Connections or links between the dimensions had to be made in order to show how each dimension related to each other and to teaching as a whole.

In considering these points for their qualitative basis, it was important to realize that the dimensions could not be addressed briefly. Explanation of rationales and viewpoints with examples had to be rather lengthy in order to summarize and capture the essence of the dimension which is what has been done in this study. Therefore, did the writer explain the dimension in the approximate length of a full chapter (3), in the approximate length of a section in a chapter and/or spread throughout the text (2), or in a few sentences/paragraphs spread throughout the text or was not covered at all (1)? Table 2 indicates to what extent the writers examined each dimension. It is important to realize that some areas are a part of others as in the case of values, socialization and culture, and the student. Consequently, although Carl Rogers (1983) discusses values rather extensively as indicated by a 3, inevitably, socialization and culture is part of this discussion. Nevertheless, Rogers does not specifically emphasize or focus on the socialization or acculturation process, but rather, on the teacher's role in dealing with the values of

TABLE 2
The Extent to Which Writers Examined the Dimensions

	Philosophical Tradition			Psychological Tradition		Sociological Tradition			
Authors	J.D.	T.F.G.	I.S.	C.R.	B.F.S.	P.F.	R.S.	C.A.B. D.J.F.	D.W.O.
Dimensions									
The Definition of Teaching	2	2	2	2	2	2	2	2	2
Metaphors to Describe Teaching	1	3	3	1	1	1	1	3	1
Terms Related to Teaching	1	3	1	1	1	1	1	1	1
The Teaching-Learning Relationship	1	3	2	1	1	1	1	1	1
The Purpose of Teaching	1	1	1	1	1	1	1	1	2
The Role of Teachers	1	1	1	3	1	1	3	3	1
The Value of Teaching/The Teaching of Values	3	1	1	3	1	1	1	1	1

(continued on next page)

TABLE 2 (continued)

The Nature of Knowledge and Subject Matter	3	3	3	1	2	3	2	3	3
The Nature of Methods	3	1	1	1	1	1	1	1	1
The Teaching of What is "Real"	1	1	1	2	1	1	1	1	1
Socialization and Culture	1	1	1	1	1	3	3	3	1
The Student	1	1	1	3	3	1	1	2	1

J. D. = John Dewey
T. F. G. = Thomas F. Green
I. S. = Israel Scheffler
C. R. = Carl Rogers
B. F. S. = B. F. Skinner
P. F. = Paulo Freire
R. S. = Roger Simon
C. A. B. = C. A. Bowers
D. J. F. = David J. Flinders
D. W. O. = David. W. Orr

3 = Material was covered in the approximate length of a full chapter.
2 = Material was covered in the approximate length of a section in a chapter and/or spread throughout text.
1 = Material was covered in a few sentences/paragraphs spread throughout text or was not covered at all.

students. This same point can be said about language, metaphors, and related terms.

Quantitative and qualitative bases have been considered in the development of criteria for selecting dimensions in the taxonomy. As stated previously, Fleishman and Quaintance's (1984) explanation regarding this area considers the development of taxonomies of human performance. The taxonomy for conceptualizing teaching relates more to human thinking which eventually leads to human performance. That is, this taxonomy reflects the thinking or philosophizing that must take place about teaching. This thinking will then reflect what is done, or performed, in the activity of teaching. Based on this, significant adaptation was done, as explained in this section, to Fleishman and Quaintance's discussion on qualitative and quantitative measures.

Criteria for the Adequacy and the Utility of the Taxonomy

Fleishman and Quaintance (1984) discuss three aspects that should be considered in the criteria for a taxonomy. These three aspects have been adapted in order to relate them to the taxonomy for conceptualizing teaching. The three areas are: (1) internal validity; (2) external validity; and (3) utilitarian criteria.

Internal validity refers to the extent that categories have been reliably classified. This is generally

accomplished by providing specific descriptions and definitions of the categories. In this research paper, reliability has been established by describing and defining not only the general descriptors (What is Teaching? Why Teach? What is Taught and How? To Whom is Teaching Done?), but also by describing and defining the dimensions that are categorized under these general descriptors. This is done in the section, Definitions of the Descriptors and Dimensions. In this section, the numbers used for the descriptors and dimensions are mainly for organizational and structural integrity. They do not indicate any specific numerical values because the taxonomy is not one of performance tasks, but, primarily, a thinking and philosophizing taxonomy.

Another aspect of internal validity involves the extent to which dimensions are exhaustive (Fleishman and Quaintance, 1984, p. 84). This has been considered in the questions that are used to address the specific dimensions. Because of this specificity and the way the questions have been worded, each dimension relates to the activity of teaching. Therefore, in this sense, all of the dimensions may not be exhaustive. If the wording is changed, the dimensions may apply to areas other than teaching. This would make the taxonomy applicable to any area in education. Specifically, the intent in this paper has been to deal with the activity of teaching. Fleishman and Quaintance (1984)

state that "while exhaustive classification is an ultimate objective, it is perhaps unrealistic during initial efforts" (p. 84). Nevertheless, the dimensions are to a certain degree exhaustive in that they each consider their location in teaching and in something that is not teaching. The user of the taxonomy must, in each case, distinguish between teaching and something other than teaching. This forces one to place the dimensions somewhere or anywhere in terms of teaching and/or education (p. 84).

External validity and utilitarian criteria are being treated together because the latter expands on external validity. External validity "pertains to how well the classificatory system achieves the objectives for which it is designed" (Fleishman and Quaintance, 1984, p. 84). The utilitarian criteria refer to how the taxonomy and its dimensions are evaluated in terms of their utility and efficiency (p. 86).

As stated previously, four primary reasons guide the development of the taxonomy for conceptualizing teaching. These four reasons also indicate the utilitarian criteria for the use of the taxonomy.

First, novice and veteran teachers need to fully understand the profession of teaching. Student teachers, as part of their practicum, are assigned to observe other teacners in different subject areas as they are teaching. These observations then are generally discussed with a

cooperating teacher and/or supervisor. The novice teacher may encounter difficulties when discussing the observation with a more experienced teacher in terms of whether what was observed was teaching or not. In other words, what is the student teacher to observe? By examining the dimensions in the taxonomy and addressing the questions of each dimension, both the novice and veteran teacher may reinforce for themselves what they believe teaching to be and the results of using the taxonomy may help in understanding what is to be observed. Therefore, the first criterion for use of the taxonomy is to help novice and veteran teachers understand what teaching is in order to better understand their profession.

Second, as Hyman (1974) has stated, "definition precedes investigation" (p. 4). It is important that, in order to "investigate" teaching for the purpose of improving it, educators be able to define what is being improved. Research indicates that there are many ways that teaching can be improved. There are specific forms of planning lessons, dealing with classroom management, asking questions, and instructional strategies, among other areas, that researchers have developed in order to make teaching more effective. Making decisions on the appropriate activities or methods to use in teaching is essential to the effectiveness of teaching. In these different areas, one can see the existence of the triadic relationship of

teaching. Preceding the improvement of teaching with an understanding of this relationship as it connects to what teaching is may make investigating and gathering of data about teaching more valid. Teachers' conceptions of teaching guide their practice of teaching. Therefore, the second criterion for the use of the taxonomy is for educational researchers, supervisors, and teachers to examine teaching in order to improve and guide their practice of teaching.

The third and final criterion for the use of the taxonomy involves the areas of evaluation and supervision. In education, administrators and supervisors evaluate teachers for many reasons. Although some reasons may be to improve teaching (2nd criterion above), the main reasons are for granting and denying tenure, for annual state evaluations, and for grading purposes in terms of student teaching practicums. These administrators and supervisors need to understand what teaching is so that they may know what they are evaluating. Having criteria that reflect a conception of teaching may help the evaluators to specifically know what to look for in the evaluation process. In turn, if teachers have developed their conceptions of teaching, this can serve as a pre-evaluation discussion between the evaluator and teacher so that there is some agreement on what is to be expected in both teaching and evaluation. Expressing some beliefs about teaching

while doing something totally different in the practice of teaching may indicate a lack of a sound philosophical conception of teaching. The taxonomy may prove to be helpful in concretizing teachers' beliefs about teaching by serving as a guide for developing a conception of teaching. Therefore, the third criterion for use of the taxonomy is so that administrators, supervisors, and others in charge of evaluation of teachers may fully understand what teaching is in terms of what is being evaluated. This will provide specific rationales that will substantiate decisions made in reference to tenure, grading of practicums, and other evaluative and supervisory activities.

Finally, Fleishman and Quaintance (1984) state in regard to the utilitarian criteria: "A taxonomic system should promote communication among its users...or those who must apply the system. It should assist heuristically in solving...applied problems..." (p. 86). In addition, they also state that time and training in using the system is an important criterion for its use. In order for the taxonomy to enjoy increased use, it is important that educators be given the opportunity to discuss the taxonomy and its dimensions. The purpose here would be so that all may understand how the taxonomy helps in developing a conception of teaching while discussing its various uses based on the three criteria. Moreover, to reinforce the issue of reliability and validity, the taxonomy should be "tested" to

assess understanding and clarity of the dimensions. This was not part of this research paper, but it certainly would be a next step. This paper primarily dealt with the development of the taxonomy. Nevertheless, Fleishman and Quaintance (1984) state that "one would hope that scientific truth is somewhat independent of people's ability to see and apply [the taxonomy]" (p. 86).

Definitions of Descriptors and Dimensions

It was stated previously that the basis for developing dimensions of teaching was that teaching involves behaviors, certain abilities, certain conditions, and a certain type of thinking. In other words, teaching is process-, function-, behavior-, performance-, and thought-based. While serving as the basis for deriving the dimensions of the taxonomy, these areas are encompassed in four general descriptors that are posed as questions. The four questions are: (1) what is teaching? (2) why teach? (3) what is taught and how? and (4) to whom is teaching done? Questions 2, 3, and 4 are based on the triadic relationship that makes up teaching. This relationship involves: (1) the teacher; (2) the subject matter; and (3) the student(s). In other words, for teaching to occur, there has to be a person that is the teacher. The teacher needs materials, information, or knowledge that is to be taught which is the subject matter. And there needs to be a person (or persons) that receive the

material, information, knowledge, or the teaching, who is (are) the student(s). Encompassing the three areas in the triadic relationship of teaching, or the three general descriptors, is the basis for these, what is teaching? Figure 1 illustrates how the three sides of the triangle represent the three areas or elements [descriptors] of the triadic relationship and the circle around the triangle the basis for this relationship. Fleishman and Quaintance (1984) state that the descriptors can be defined rather broadly and in general terms. This "ensure[s] that important attributes and descriptors yielding unique information are not disregarded in this preliminary stage" (p. 65). The four general descriptors serve as the headings for the specific dimensions.

In analyzing some conceptions of teaching, three already established dimensions were taken into consideration. Akinpelu (1981) states that in developing a personal philosophy of education, three important components which should be part of any philosophy are metaphysics, epistemology, and axiology (p. 10). Although the concern here is for conceptualizing teaching as opposed to developing a philosophy of education, one can be derived from the other.

Conceptualizing in order to develop a conception of teaching should therefore contain metaphysics, epistemology, and axiology as dimensions, or in simpler terms, the nature of reality, the nature of knowledge, and the nature of

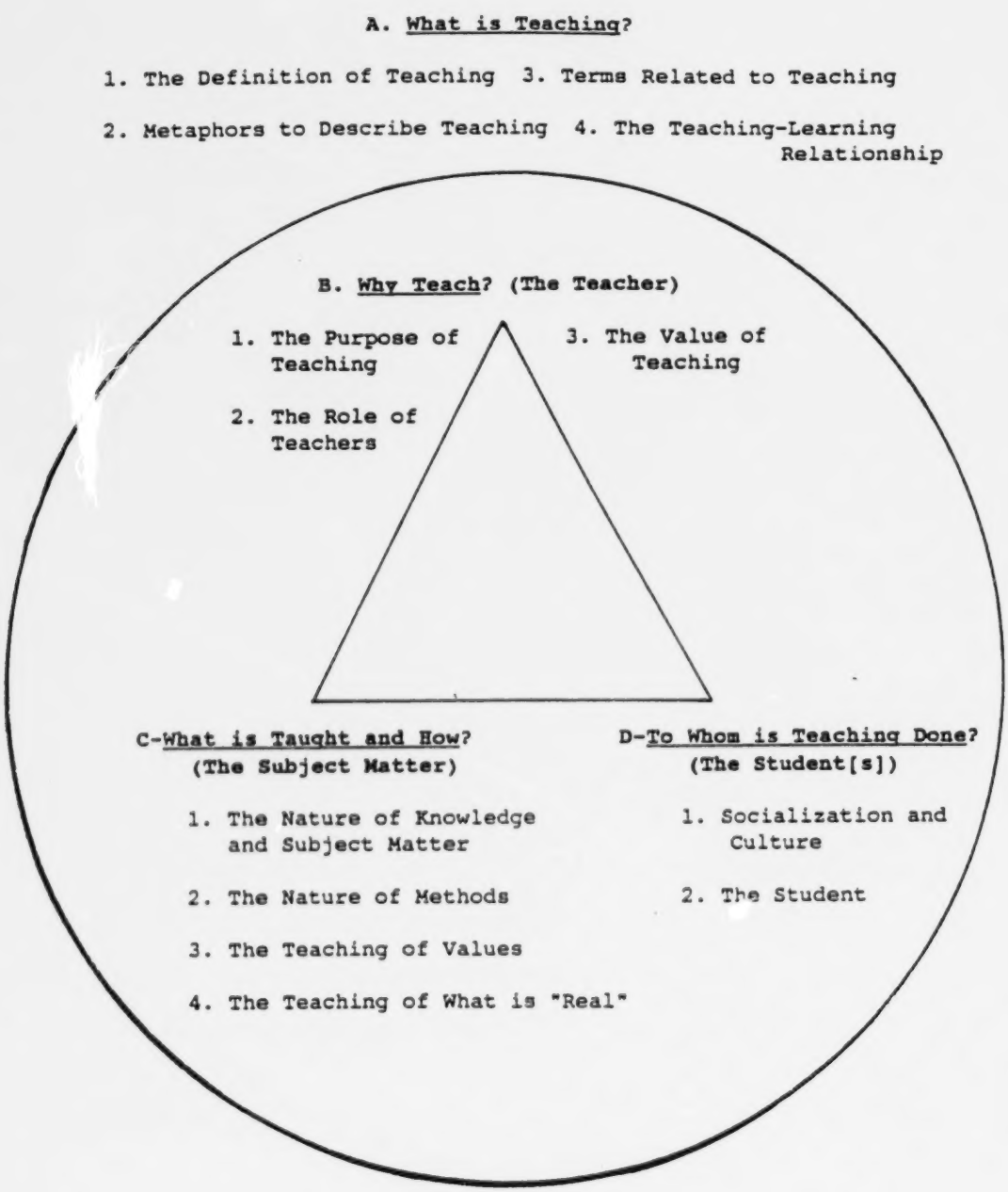
A. What is Teaching?
1. The Definition of Teaching
2. Metaphors to Describe Teaching
3. Terms Related to Teaching
4. The Teaching-Learning Relationship
B. Why Teach? (The Teacher)
1. The Purpose of Teaching
2. The Role of Teachers
3. The Value of Teaching
C-What is Taught and How? (The Subject Matter)
1. The Nature of Knowledge and Subject Matter
2. The Nature of Methods
3. The Teaching of Values
4. The Teaching of What is "Real"
D-To Whom is Teaching Done? (The Student[s])
1. Socialization and Culture
2. The Student

Figure 1
A Taxonomy for Conceptualizing Teaching

BEST COPY AVAILABLE

values. From these three dimensions, others arise which complement the whole analysis and conceptualization. Figure 1 illustrates the organization of the taxonomy in terms of the general descriptors and their dimensions. Descriptor A: what is teaching, has the following dimensions: (1) the definition of teaching; (2) metaphors to describe teaching; (3) terms related to teaching; and (4) the teaching-learning relationship. Descriptor B: why teach, has the dimensions of: (1) the purpose of teaching; (2) the role of teachers; and (3) the value of teaching. Descriptor C: what is taught and how, has the dimensions of: (1) the nature of knowledge and subject matter; (2) the nature of methods; (3) the teaching of values; and (4) the teaching of what is "real". Descriptor D: to whom is teaching done, has two dimensions: (1) socialization and culture; and (2) the student.

Descriptor A: What is Teaching?

As stated in the previous section, what is teaching encompasses the triadic relationship that makes up teaching: the teacher, the subject matter, and the student. This descriptor, therefore, serves as the foundation for the elements, or descriptors, that are part of teaching. One must understand what teaching is in terms of a specific definition before an attempt is made to conceptualize on the other three descriptors that form the triadic relationship

of teaching. As one defines teaching, helping one to understand that definition may be done by explaining teaching metaphorically and, in addition, making distinctions between teaching and other terms that may be commonly associated with teaching. Finally, because learning is a part of teaching in some way, before we examine the teacher, the student, and the subject matter, the teaching-learning relationship must be understood to determine connections between this relationship and the other descriptors. Therefore, the following four dimensions fall within the general foundational descriptor, what is teaching: (1) The Definition of Teaching; (2) Metaphors to Describe Teaching; (3) Terms Related to Teaching; and (4) The Teaching-Learning Relationship.

Dimension A-1:
The Definition of Teaching

In stating a definition of teaching, one needs to consider what the word teaching itself may reflect that will, in turn, give some indication of what is the practice of teaching. As stated previously, teaching is being conceptualized. This leads to one's own definition of teaching. In this dimension, what is stated is a definition of teaching as if one were writing it for a dictionary. In addition, an explanation of the definition is needed to substantiate how it was derived. Certain words that are

synonymous with teaching may be used to define teaching such as Dewey (1916) who uses recitation, Simon (1992) who uses pedagogy, and Rogers (1983) who uses facilitating. One can also consider what, if any, is the relation between the definition, the thought processes, and functional aspects in teaching as well as its behavioral aspects. Therefore:

1. What is a definition of teaching? Are there any other terms that can be synonymous with, or be substituted for teaching? What are those? Explain.

2. Based on the definition, what distinguishes teaching from something that is not teaching? In other words, would people be able to determine whether teaching was or was not occurring by using this definition?

Dimension A-2:
Metaphors to Describe Teaching

In this dimension, teaching can be described through the use of metaphors. Any metaphors that are used will require an explanation and examples of how the metaphor serves to explain what teaching is. In addition, one needs to explain what, in fact, is a metaphor and what does it help one do in terms of teaching. Green (1971) and Scheffler (1978) both provide explanations of how metaphors help one understand teaching. Green says metaphors are concealed arguments for analogies and Scheffler says they parallel analogies and help organize social thought.

Therefore:

1. What metaphor (or metaphors), if any, can be associated with teaching?

2. What does this metaphor (or do these metaphors) indicate in terms of, not only what teaching is, but how it is practiced?

3. How does the metaphor selected to describe teaching relate to the definition of teaching?

Dimension A-3:
Terms Related to Teaching

In order that one can determine whether teaching is really occurring after stating a definition, several terms that are used in education must be distinguished from teaching and defined as well. Some, if not all, of the following terms may be considered: training, conditioning, instructing, indoctrinating, brainwashing, educating, and schooling. Green (1971) specifically places these terms in a continuum in relation to teaching (p. 33). In this continuum, he defines each term and indicates to what degree each term relates to teaching. Whichever of these terms are used, they must be defined and the relationship between these and teaching must be explained. Examples should be provided for each term so that a distinction, if any, between the terms and teaching is clear. Therefore, as one conceptualizes these terms, one's own definition is

developed that may reflect processes, functions, and behaviors of each of these terms. The following questions should be addressed in this dimension:

1. What are other terms that are generally related to teaching? Define these terms and explain how each of these relates to teaching, specifically the definition of teaching and the metaphor(s) used to describe teaching.

2. What thought processes are part of these terms? How are these reflected in behavior?

3. What function do these terms serve? How are these functions different from or the same as teaching?

Dimension A-4:
The Teaching-Learning Relationship

Within this dimension, the emphasis is on teaching and its effects on learning. As Green (1971) and Scheffler (1978) point out when discussing this dimension, teaching does not necessarily result in learning. Therefore, here one needs to consider if, in fact, teaching should lead to learning. If teaching does not necessarily lead to learning, then can it be said that what occurred was actually teaching? Scheffler also states that learning does not always occur as a result of teaching. Does this mean that students can learn without any teaching going on? Are teaching and learning mutually exclusive terms? One must consider what is the guarantee of teaching in terms of

learning. An examination of the following statements should probably be part of this dimension: There can be no teaching without learning. There can be teaching without learning.

The following questions should be addressed when discussing the teaching-learning relationship:

1. Does teaching result in learning and does learning occur as a result of teaching? Explain.

2. Is learning the intention of teaching? Explain.

3. How is the apparent paradox between the two statements, There can be no teaching without learning; and There can be teaching without learning, resolved and explained?

Descriptor B: Why Teach? (The Teacher)

This descriptor considers one of the areas that is part of the triadic relationship of teaching, the teacher. In considering the role of the teacher as the person that has a certain responsibility in putting forth knowledge to students, the question, why put forth this knowledge in the first place, is posed. Putting forth knowledge automatically brings to bear issues of value because one needs to examine what the importance of presenting or putting forth knowledge is. In other words, is there, in

fact, a value to teaching? In this descriptor, three main dimensions exist: (1) The Purpose of Teaching; (2) The Role of Teachers; and (3) The Value of Teaching.

Dimension B-1:
The Purpose of Teaching

Orr (1992) discusses the purpose of teaching as integral for students to understand the issue of sustainability. He states that the purpose of teaching is to bring knowledge into interdisciplinary forms so that students can better analyze their experiences in society to see how sustainability affects how one lives. This conceptualizing indicates that the purpose of teaching relates to how one views education, living, and knowledge among others. In other words, what is the link or connection between teaching and society, teaching and schools? Why does teaching have to exist in the first place? What does teaching really accomplish? In this dimension, educators should examine what it is that they do to determine the purpose of teaching. In addition, references to related terms may be made here, especially the term educating. Is there a difference between the purpose of teaching and the purpose of educating? Some additional questions that should be addressed in examining the purpose of teaching are:

1. What is the purpose, or aim of teaching and why?

2. Is teaching necessary or can schools do without it?

Dimension B-2:
The Role of Teachers

The previous dimension is more of a general statement about the purpose of teaching. This dimension relates to the role of teachers in terms of the purpose of teaching. In a sense, the role of teachers serves to explain more specifically the purpose of teaching. When describing the role of teachers, one may use the explanation of the metaphor dimension to elaborate on the role. Based on the metaphor used to describe teaching and its purpose, is the role of a teacher one of artist, craftsman, scientist, gardener, traffic cop, facilitator, supervisor, assistant, headmaster, expert, etc.? Simon (1992) states that teachers are cultural workers in order to explain his pedagogy of possibilities in relation to the social and political aspects that are imbedded in teaching. Bowers and Flinders (1990) state that teachers are gatekeepers while they manage the entrance of knowledge in terms of students' language, culture, and thought for the development of theoretical frameworks of teaching. Bowers, Flinders, and Simon express the role of teachers in relation to their definitions and purposes of teaching. Therefore, consideration should be given to the following questions when addresssing this dimension:

1. What is the primary function of teachers in teaching?

2. How does this role, specifically, reinforce the purpose of teaching?

3. In what way does the role of the teacher relate to how teaching has been described metaphorically?

4. How is the role of teachers described when bringing together the explanations of the dimensions, the definition of teaching, metaphors to describe teaching, terms related to teaching, the teaching-learning relationship, and the purpose of teaching?

Dimension B-3:
The Value of Teaching

This dimension is concerned with the value of teaching in terms of the worth that teaching has. Dewey (1916) states that teaching must not be divided into an intrinsically valued activity and one that is valued beyond itself. Teaching should contribute to the immediate significance of the teaching experience and to a direct appreciation. Rogers (1983) talks about values as being preferred by people as simply behavioral choosing, preferred because of symbolism, or preferred because of objectivity. Therefore, one needs to consider where one places the value of teaching. Does it simply have extrinsic worth or does it contribute not only to the appreciation of knowledge, but to

an appreciation of what teaching stands for in relation to students? In other words, is teaching valued for what teaching is, or is it a means to something else? In addition, the ethical issue of teaching should also be part of this dimension. Since teaching deals with presenting knowledge, what knowledge is presented and how is it presented, or put forth? This is an ethical issue especially when selecting or choosing is involved. Therefore, the following questions should be addressed when explaining the value of teaching:

1. What is of value in teaching or what makes teaching valuable?

2. What, if anything, is of instrinsic and/or extrinsic value about teaching?

3. What is the value of teaching in terms of its long-lasting effects on students?

4. How does the value of teaching relate to the definition and purpose of teaching, and to the role of teachers?

5. What ethical dilemmas are posed when exercising the power to select and/or choose knowledge, for example?

6. Is there a standard of ethics in teaching and, if so, what is it?

Descriptor C: What is Taught and How?
(The Subject Matter)

This descriptor relates to the second area that is part of the triadic relationship of teaching, the subject matter. Here one deals not only with specific subject matter, but with knowledge in general. It is examined in order to express what it means to know something and how one acquires knowledge so that it can be said, "I know." In addition, this descriptor also looks at how others can avail themselves of knowledge by examining the nature of methods, specifically those related to teaching. Knowledge inadvertently involves choices, and choices inevitably involve values. Therefore, this area also considers values as a form of subject matter that is part of teaching. Finally, inherent in the teaching of subject matter and values is the concept of teaching what is "real", especially when students are removed from society's day-to-day living to be placed in a different environment such as schools. The dimensions in this descriptor are: (1) The Nature of Knowledge and Subject Matter; (2) The Nature of Methods; (3) The Teaching of Values; and (4) The Teaching of What is "Real".

Dimension C-1:
The Nature of Knowledge
and Subject Matter

This area deals with questions of epistemology which attempt to address issues of the nature, basis, and extent of knowledge. Psychologists sometimes debate the issue of whether humans are born with or without knowledge. The familiar term, "the blank slate" is one that is used by some to indicate that humans are born with no knowledge and they acquire it through experience and interaction. As Barry (1980) states: "Epistemology presents us with the task of explaining how we know what we claim to know, how we can find out what we wish to know, and how we can judge someone else's claim to knowledge" (p. 229). Scheffler's (1989) discussion on the nature of knowledge involves certain models which can be used in teaching. They reflect different sources of knowledge that, in turn, affect the activity of teaching. Green (1971) uses theoretical constructs that must be evident in teaching in order for certain sources of knowledge to reflect the nature of knowledge itself. For Skinner (1968), the nature of knowledge comes from a person's overt behaviors. Rogers (1983) and Simon (1992) indicate that knowledge is based on a person's own reality and personal experiences, and Bowers and Flinders (1990) similarly state that knowledge is an aggregate of interacting elements. Subject matter knowledge is also derived from general knowledge in that it is

specific to a discipline, but some of the writers say that knowledge should not be disconnected or fragmented. Therefore, the following questions should be addressed when considering this dimension:

1. What is the source of knowledge?

2. Are people born with knowledge or does one come to this world with a "blank slate"?

3. What does it mean to know something?

4. What type of knowledge is of most worth?

5. Is all knowledge specific as in subject matter knowledge, or is there such a thing as general knowledge?

Dimension C-2:
The Nature of Methods

Although Dewey is the only one of the writers examined in this study who discusses the nature of method, it is important to have this as a dimension because teachers use certain formats, generally referred to as methods, in teaching. What methods are and how they are used is important to conceptualize because they directly affect what teaching is. Dewey (1916) first defines "method" and then discusses how it is used to present knowledge, i.e., materials and subject matter. He discusses the direct link between knowledge and subject matter knowledge, and methods. The following questions are derived considering some of Dewey's points regarding the nature of method:

1. How does one define the term methods?

2. Are the terms modes, strategies, and techniques synonymous with method or do they refer to something different? If they refer to something different, how are they defined?

3. Is there a best (or preferred) way to acquire knowledge, i.e., subject matter, value, "real", and any other kind of knowledge? If so, what is it?

4. How do the definition and purpose of teaching, the metaphors to describe teaching, and the role of teachers fit into the nature of methods and to how the term methods has been defined?

Dimension C-3:
The Teaching of Values

This dimension is somewhat similar to the dimension, The Value of Teaching, which was the dimension included within the previous descriptor. However, The Teaching of Values is also concerned with some different components. It has already been established that teaching involves choosing, selecting, and some would state, decision making. In addition, part of what is chosen or selected is knowledge and subject matter as well as choosing and selecting how the knowledge and subject matter is presented, i.e., the method. The knowledge or material within the subject matter contains certain values that invariably are taught. There are also

ethical and moral issues imbedded in values that become part of the knowledge that is taught. When a teacher selects, chooses, and/or decides, there is a reflection of what is of "worth" by that teacher. These are important points, especially when there currently appears to be a significant concern about teachers determining what is of worth and whether or not it should be taught. Therefore, some questions to consider in this dimension are:

1. How do values arise and where do values come from?
2. What role should values play in teaching?
3. What values are reflected in the definition and purpose of teaching? in the metaphoric description of teaching? in the role of teachers? in the discussion of the nature of knowledge?
4. What is one's position on conflicting values between you, your students, the schools, the community, the school curriculum (the subject matter), and the methods prescribed by the school?
5. In teaching values, what determines whether something is good, bad, right, wrong, desirable, undesirable, beneficial, harmful and/or other related terms?

Dimension C-4:
The Teaching of What is "Real"

Rogers (1983) discusses that "being real" in teaching is when teachers, as humans, also consider their students as

humans. Being real concerns finding one's own identity which, in turn, determines one's philosophy of life. In order to do this, Rogers (1983) and Simon (1992) both state that students' own experiences must be part of the knowledge that is discussed as part of teaching. Students should be able to tell their own stories and find the connections between their world and the world that the teacher is attempting to relate to them. This for Rogers and Simon would be the teaching of what is "real". Teachers must examine their own identities in terms of what their view of reality is. This is important because, as stated previously, both teachers and students are removed from the outside world and placed for several hours in a setting that is different. Therefore:

1. What is one's view of reality? What is its connection to teaching?

2. Is reality simply things (objects), or is it ideas, thoughts, and/or experiences?

3. What does the term "real world" or "relevancy" mean in relation to teaching?

4. How does one's definition and purpose of teaching; metaphoric descriptors of teaching; the role of teachers; the nature of knowledge and methods; and the teaching of values reflect one's view of reality?

Descriptor D: To Whom is Teaching Done? (The Student[s])

The third area that is part of the triadic relationship of teaching is the student. In other words, it is to whom teaching is done. This is an important area because there have to be persons that may or may not benefit from teaching. Whether they benefit or not is only part of the issue in this descriptor. What is emphasized in this descriptor is that there has to be somebody present in order to teach and that the somebody has a definite and significant role to play in the activity of teaching. Usually, when teaching refers to the giving or presenting of knowledge, those who receive this knowledge are recognized as students. Sometimes the word pupil is also used as well as scholar and learner. In this general area of to whom teaching is done, it is important to conceptualize the process of interaction that occurs in teaching between the teacher and the student. The two dimensions within this descriptor are: (1) Socialization and culture; and (2) The Student.

Dimension D-1: Socialization and Culture

Teaching is a social event because it involves interaction between two sides composed of individuals, one

being teachers and the other students. In teaching, the students bring with them their lives, their experiences, and their beings which generally reflect ways of thinking and acting. In other words, students may bring into the teaching process patterns or customs that indicate particular cultural norms. In addition, as stated previously, teaching deals with behavior and thinking. This, together with the sociality involved, indicates that there is some type of socialization which occurs in teaching.

Freire (1990) shows that problem-posing teaching involves socialization so that cooperation, unity for liberation, organization, and cultural synthesis will be obtained. Culture is part of this socialization because in Freire's problem-posing teaching, cultural action must be the result of transformation. Problem-posing teaching which occurs in the form of a dialogue considers the students lives and experiences to obtain cooperation, unity for liberation, organization, and cultural synthesis. Simon's (1992) thoughts on the role of socialization in teaching are similar when he explains that the lives, experiences, and being of students should not be denied, diluted, or distorted. Socialization in teaching is supposed to develop the students' human capacities which reflect patterns, customs, and norms. Simon further explains that teaching should involve the interrogation and investigation of

different social forms which he calls a project of possibility. Thus, both Friere and Simon give specific theoretical and practical frameworks for socialization and culture as part of teaching. Therefore, consideration should be given to the following questions in this dimension:

1. What does socialization mean in relation to teaching?

2. How does culture fit into this definition?

3. What considerations, if any, are given to the students' cultural patterns, customs, and norms in the socialization that occurs in teaching?

4. How does socialization and culture affect the teaching of values and the teaching of what is "real"?

5. What is the link between this dimension and previous ones such as the definition, the purpose, the value of teaching, and the nature of knowledge and methods?

Dimension D-2:
The Student

Rogers (1983) and Skinner (1968) are the only ones who covered this dimension separately and on its own. Some of the other writers did refer to the student in their discussions of other dimensions but they were not always clear and explicit on the role of students and how it related to other dimensions. A separate consideration of

the role of students, its relation to other dimensions, other terms used synonymously with student, as well as other aspects of this third area in the triadic relationship and final dimension of teaching is needed. It is impossible to talk about teaching without including the student, for, as stated previously, if there is a teacher and subject matter, there has to be a student to which teaching can be done and who would receive the subject matter. This latter issue appears to indicate that once the students have received the subject matter, the knowledge, they have to do something with it. If this is the case, what would that something be? Students, therefore, apparently have a particular role to play as teaching is done to them, or with them. This role may be reflected in how one defines student and how one relates other terms such as learner, pupil, and scholar to the term student. Specifically, in relation to the dimension, The Student:

1. What is one's definition of student? learner? pupil? scholar? What are the similarities and differences?

2. What does the definition of student connote in terms of the role students are supposed to play in teaching?

3. How does the role of students relate to the other two areas (elements), or dimensions of teaching in the triadic relationship and to the dimensions in the descriptor, what is teaching?

Summary

This research paper presented the process and product of developing a taxonomy for conceptualizing teaching. The process involved substantiating the selection of particular dimensions to be included in the taxonomy on quantitative and qualitative grounds. Here, consideration was given to how extensive and significant specific areas were discussed by writers who conceptualized teaching.

The process also involved attaining a certain degree of reliability and validity. By defining each of the descriptors and their underlying dimensions objectively and concisely, a certain degree of reliability was achieved which made the task, or the thinking about teaching, more manageable or operational. This was important to obtain since teaching is rather complex when considering its definition.

In addition, while defining the descriptors and dimensions provided reliability, describing criteria for the adequacy of the use of the taxonomy provided validity. Reliability and validity are interconnected because, for example, internal validity refers to the extent the dimensions were reliably classified. Validity was also accomplished by describing utilitarian criteria for the use of the taxonomy.

Finally, four general descriptors, what is teaching,

why teach, what is taught and how, and to whom is teaching done, and their underlying dimensions were systematically arranged which resulted in the product, a classification system, a taxonomy for conceptualizing teaching. Using the taxonomy involves addressing specific questions that are posed under each of the dimensions. The descriptor, what is teaching, with its underlying dimensions should be addressed first when conceptualizing teaching. This serves as a philosophical foundation to a conception of teaching by considering issues such as the definition of teaching and distinguishing teaching from other related terms. The other descriptors can then be considered in any order.

Suggestions for Using the Taxonomy

When using this taxonomy and developing one's conception of teaching, it is important to recognize that, just as philosophy, beliefs, and values change, so will one's conception. As one gains more experience in teaching and in life, one's views about reality, values, subject matter, students, etc., also change. Therefore, one's conception of teaching will also require changes and modifications. It would be erroneous to think that one's conception of teaching would remain the same after a period of time or that it would never change.

In reference to the dimensions of the taxonomy, these

were developed based on the conceptions of teaching of selected writers in the research literature. The questions, although based on how some of those writers expressed their conception, were primarily developed by the author of this paper as he was influenced on the importance of certain aspects of teaching. These questions were different when the they were originally developed. Some questions were eliminated, others added, and others reworded as the author wrote his conception of teaching. The key in the changes were clarity and conciseness in expressing the essence of the dimension.

Finally, the purpose in using the taxonomy for conceptualizing teaching is that, rather than having ideas and beliefs in one's mind without any concrete organization, it is better to organize those thoughts into a formal conceptual statement. After developing one's conception, it can be used to see to what extent one's conception of teaching reflects one's practice of teaching for the purpose of substantiating that practice to oneself and to others.

In addition, once a teacher has developed her conception using the taxonomy, it can help a colleague who is involved in a peer coaching situation. When one is to observe the other teaching, the taxonomy and the conception developed can help target specific areas for observation. Moreover, the taxonomy and its developed conception can provide the observer with the method(s) of observation. The

results of observation(s) can then be examined and analyzed with the observed teacher's conception of teaching.

Similar to the above example, a supervisor of student teachers who may use clinical supervision as a method of helping novice teachers improve their teaching, can use the taxonomy with student teachers. The student teachers' conceptions of teaching can be a significant part of the student teachers' espoused platform. The espoused platform (conception of teaching) can be used as the basis for successive observations by the supervisor and also seve as a self-improvement tool for teaching by student teachers.

New and veteran teachers can also develop their conception of teaching with the taxonomy and use it to help them select materials for a lesson/unit, adapt curricula or even write curricula, and select methods, strategies and techniques for a specific lesson, among other things. They can refer back to their conceptions as they assess the results of the materials, curricula, methods and strategies.

In addition, teachers can use the taxonomy and their conception of teaching to observe and assess how they may be interacting with their students. This refers to the consideration that teachers need to have regarding cultural and societa. differences among their students. The taxonomy can also assist the teacher to develop forms of classroom management that reflect the dimensions of Metaphors to Describe Teaching, Socialization and Culture, and The

Student. Teachers' beliefs about these areas can help in the development of forms of management and discipline that are culturally responsive and sensitive and that reflect the teachers' definition and purpose of teaching.

The taxonomy and its developed conception can also be exchanged between teachers to find commonalities for the purpose of developing interdisciplinary activities among different subject areas. In addition, finding differences in teachers' conceptions may also be beneficial in that a balance can be created between similar and dissimilar beliefs that may be enriching to the lessons/units prepared and to the activity of teaching in an interdisciplinary format.

These suggestions serve as a beginning for how the taxonomy can be used. It is probable that as some of these uses are implemented, other uses will be found by participating teachers which would eventually add to the list of suggestions. The fact that other uses would undoubtedly be found reflects, what has already been stated, the multifaceted nature of teaching. The author, without hesitation, would encourage teachers to find other uses for the taxonomy. This searching would inevitably lead to further examining of the conception of teaching by participating teachers.

Conclusion

In developing a taxonomy for conceptualizing teaching, it is hoped that educators begin to seriously and critically think about what it is that they do in regards to teaching. Educators, and, specifically, teachers should do this by asking themselves the question, what is teaching?, which served as the basis for this research paper. All educators, especially those involved in teaching need to be "expert" as opposed to "novice" thinkers. They should not simply assume that everyone knows what teaching is and leave the subsurface thinking to university faculty who are generally involved in research of this type. If teachers, especially those in the early, elementary, and secondary education are to be considered professionals, something that educators have been trying to instill in the public and community at large, then these teachers must make a concerted effort to understand their own profession, to fully comprehend and explain the activity of teaching. Fleishman and Quaintance (1984) in discussing taxonomies have used the term human tasks. Although their emphasis has been primarily on behavior, human tasks also can refer to thinking. This would certainly be the case, initially, in regards to teaching. Afterwards, the thinking would move into behaviors, acting, doing, or the practice of teaching. As Fleishman and Quaintance (1984) state:

We urge behavioral scientists, researchers, and practitioners to confront the taxonomic problems of their discipline. It is a safe assumption that the world of human tasks is not impossibly diverse. We are encouraged that systems for classifying such tasks do improve our predictions and generalizations regarding human task performance. If nature is more complex than we would like it to be, we need to take steps to organize and conceptualize it in ways that will make it more manageable. (p. 436)

REFERENCES

Acheson, K. A., & Gall, M. D. (1987). Techniques in the clinical supervision of teachers: Preservice and inservice applications. New York: Longman.

Akinpelu, J. A. (1981). An introduction to philosophy of education. New York: MacMillan.

Bandman, B., & Guttchen, R. S. (Eds.). (1969). Philosophical essays on teaching. Philadelphia: J. B. Lippincott.

Barry, V. (1980). Philosophy: A text with readings. Belmont, CA: Wadsworth.

Belth, M. (1970). The new world of education: A philosophical analysis of concepts of teaching. Boston: Allyn and Bacon.

Bereiter, C., & Scardamalia, M. (1986). Educational relevance of the study of expertise. Interchange, 17(2), 10-19.

Berliner, D. C. (1986). In pursuit of the expert pedagogue. Educational Researcher, 15(7), 5-13.

Bigge, M. L. (1982). Educational philosophies for teachers. Columbus, OH: Charles E. Merrill.

Black, H. C. (1973). The relevancy of teaching philosophy of education. Journal of Thought, 8(1), 65-73.

Bowers, C. A., & Flanders, D. J. (1990). Responsive teaching: An ecological approach to classroom patterns of language, culture, and thought. New York: Teachers

College Press.

Brameld, T. (1956). Toward a reconstructed philosophy of education. New York: The Dryden Press.

Brezinka, W. (1992). Philosophy of educational knowledge: An introduction to the foundations of science of education, philosophy of education, and practical pedagogics. Boston: Kluwer Academic.

Brookfield, S. D. (1987). Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting. San Francisco: Jossey-Bass.

Broudy, H. S. (1972). Didactics, heuristics, and philetics. Educational Theory, 22(3), 251-261.

Calderhead, J., & Robson, M. (1991). Images of teaching: Student teachers' early conceptions of classroom practice. Teaching and Teacher Education, 7(1), 1-8.

Clark, C. (1989). Why teachers need philosophy. Journal of Philosophy of Education, 23(2), 241-252.

Cogan, M. L. (1973). Clinical supervision. Boston: Houghton Mifflin.

Comenius, J. A. (1953). The analytical didactic of Comenius. Chicago: The University of Chicago Press.

Common, D. L. (1991). Curriculum design and teaching for understanding. Toronto: Kagan and Woo Limited.

Costa, A. L., & Garmston, R. (1985). Supervision for intelligent teaching. Educational Leadership, 42(5), 70-80.

Counts, G. S. (1932). Dare the school build a new social order? Carbondale: Southern Illinois University Press.

Dewey, J. (1909). Moral principles in education. Carbondale: Southern Illinois University Press.

_____. (1916). Democracy and education: An introduction to the philosophy of education. New York: The Free Press.

_____. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. Lexington, MASS: D. C. Heath and Co.

_____. (1938). Experience and education. New York: Collier Books.

Dietl, P. (1973). Teaching, learning and knowing. Educational Philosophy & Theory, 5(2), 1-25.

Doyle, W. (1992). Curriculum and pedagogy. In P. W. Jackson (Ed.), Handbook of research on curriculum (pp. 486-516). New York: MacMillan.

Dunkin, M. J., & Biddle, B. J. (1974). The study of teaching. New York: University Press of America.

Eisner, E. W. (1992). Curriculum ideologies. In P. W. Jackson (Ed.), Handbook of research on curriculum (pp. 302-326). New York: MacMillan.

Eisner, E. W., & Vallance, E. (Eds.). (1974). Conflicting conceptions of the curriculum. National Society for the Study of Education Series on Contemporary Education. Berkeley: McCutchan.

Eggen, P. D., Kauchak, D. P., & Harder, R. J. (1979). Strategies for teachers: Information processing models in the classroom. Englewood Cliffs, NJ: Prentice-Hall.

Fenstermacher, G. D. (1986). Philosophy of research on teaching: Three aspects. In M. C. Wittrock (Ed.), Handbook of research on teaching. New York: MacMillan.

Fenstermacher, G. D., & Soltis, J. F. (1986). Approaches to teaching. New York: Teachers College Press.

Fleishman, E. A. (1982). Systems for describing human tasks. American Psychologist, 37(7), 821-834.

Fleishman, E. A., & Quaintance, M. K. (1984). Taxonomies of human performance: The description of human tasks. Orlando: Academic Press, Inc.

Freeman, D. (1991). "To make the tacit explicit": Teacher education, emerging discourse, and conceptions of teaching. Teaching and Teacher Education, 7(5/6), 439-454.

Freire, P. (1973). Education for critical consciousness. New York: Continuum.

_____. (1990). Pedagogy of the oppressed (32nd printing). New York: Continuum.

Gage, N. L. (1977). The scientific basis of the art of teaching. New York: Teachers College Press.

Gagné, R. M. (1977). The conditions of learning (3rd ed.). New York: Holt, Rinehart and Winston.

Garman, N. B. (1982). The clinical approach to supervision.

In T. J. Sergiovanni (Ed.), Supervision of teaching (pp. 35-52). Alexandria, VA: Association for Curriculum and Supervision.

Garman, N. B. (1990). Theories embedded in the events of clinical supervision: A hermeneutic approach. Journal of Curriculum and Supervision, 5(3), 201-213.

Glaser, R. (1984). Education and thinking: The role of knowledge. American Psychologist, 39(2), 93-104.

_____. (1985). The nature of expertise. The National Center for Research in Vocational Education Occasional Paper No. 107. Columbus: The Ohio State University

Goldhammer, R. (1969). Clinical supervision. New York: Holt, Rinehart and Winston.

Gordon, S. P. (1992). Beliefs about supervision. Unpublished manuscript. The Pennsylvania State University, Department of Curriculum and Instruction, University Park, PA.

Goodman, J. (1988). Constructing a practical philosophy of teaching: A study of preservice teachers' professional perspectives. Teaching and Teacher Education, 4(2), 121-137.

Greene, M. (1986). Philosophy and teaching. In M. C. Wittrock (Ed.), Handbook of research on teaching (pp. 479-501). New York: MacMillan.

_____. (1988). The dialectic of freedom. New York: Teachers College Press.

Green, T. F. (1965). Discussion: Teaching, acting, and behaving. Harvard Educational Review, 35(2), 203-209.

_____. (1968). A typology of the teaching concept. In C. J. B. Macmillan, & T. W. Nelson (Eds), Concepts of teaching: Philosophical essays (pp. 28-62). Chicago: Rand McNally.

_____. (1971). The activities of teaching. New York: McGraw Hill Book Co.

Griffiths, D. E. (1969). (Ed.). Developing taxonomies of organizational behavior in education administration. Chicago: Rand McNally.

Gutek, G. L. (1988). Philosophical and ideological perspectives on education. Englewood Cliffs, NJ: Prentice-Hall.

Hamm, C. M. (1989). Philosophical issues in education: An introduction. New York: The Falmer Press.

Hare, W. (1985). Controversies in teaching. London: The Althouse Press.

Harris, I. B. (1982). Communication for guiding teachers: The impact of different conceptions of teaching and educational practice. Minneapolis: University of Minnesota, Medical School. (ERIC Document Reproduction Service No. ED 217 040)

Heck, S. F., & Williams, C. R. (1984). The complex roles of the teacher: An ecological perspective. New York: Teachers College Press.

Hewson, P. W., & Hewson, M. G. A'B. (1989). Analysis and use of a task for identifying conceptions of teaching science. Journal of Education for Teaching, 15(3), 191-209.

Highet, G. (1950). The art of teaching. New York: The Vintage Books.

Hirsch, E. D. (1987). Cultural literacy: What every American needs to know. New York: Vintage Books.

Houston, W. R. (1990). (Ed.). Handbook of research on teacher education. New York: MacMillan.

Hunter, M. (1984). Knowing, teaching, and supervising. In P. L. Hosford (Ed.), Using what we know about teaching (pp. 169-192). Alexandria, VA: Association for Supervision and Curriculum Development.

Hyman, R. T. (1974). Ways of teaching (2nd ed.). Philadelphia: J. P. Lippincott Co.

Jackson, P. W. (1986). The practice of teaching. New York: Teachers College Press.

_____. (1992). Conceptions of curriculum and curriculum specialists. In P. W. Jackson (Ed.), Handbook of research on curriculum (pp. 3-40). New York: MacMillan.

_____. (Ed.). (1992). Handbook of research on curriculum. New York: MacMillan.

Johnston, B. J., & Applefield, J. M. (1988). Teaching undergraduates philosophy of education: Description of

a strategy. Teaching Education, 2(1), 34-39.

Kapunan, S. C. (1975). Teaching implies learning. Educational Theory, 25(4), 362-378.

Kerr, D. H. (1974). Analyses of "teaching". Educational Philosophy & Theory, 6(1), 59-67.

Kleinig, J. (1982). Philosophical issues in education. London: Croon Helm.

Kneller, G. F. (1984). Movements of thought in modern education. New York: Wiley.

Komisar, B. P. (1965). More on the concept of learning. Educational Theory, 15(3), 230-239.

Lamm, Z. (1976). Conflicting theories of instruction: Conceptual dimensions. Berkeley: McCutchan.

Liston, D. P., & Zeichner, K. M. (1991). Teacher education and the social conditions of schooling. New York: Routledge, Chapman and Hall.

Lloyd, D. I. (Ed.). (1976). Philosophy and the teacher. London: Routledge & Kegan Paul.

MacGee, J. B. (1971). Philosophical analysis in education. New York: Harper & Row.

Macmillan, C. J. B., & Nelson, T. W. (Eds.). (1968). Concepts of teaching: Philosophical essays. Chicago: Rand McNally.

Macmillan, C. J. B., & Garrison, J. W. (1983). An erotetic concept of teaching. Educational Theory, 33(3/4), 157-166.

Mann, J. (1978). Curriculum criticism. In G. Willis (Ed.), Qualitative evaluation: Concepts and cases in curriculum criticism (pp. 91-111). (Reprinted from 1964). Berkeley: McCutcheon.

McCann, H., & Yaxley, B. (1992). Retaining the philosophy of education in teacher education. Educational Philosophy and Theory, 24(1), 51-67.

McClellan, J. E. (1976). Philosophy of education. Englewood Cliffs, NJ: Prentice-Hall.

McCutcheon, G. (1979). Educational criticism: Methods and application. Journal of Curriculum Theorizing, 1(2), 5-25.

McEwan, H. (1989). Teaching as pedagogic interpretation. Journal of Philosophy of Education, 23(1), 61-71.

Melton, A. W. (1964). (Ed.). Categories of human learning. New York: Academic Press.

Moore, T. W. (1982). Philosophy of education: An introduction. London: Routledge & Kegan Paul.

Morris, C. (1956). Varieties of human values. Chicago: University of Chicago Press.

Mosston, M. & Ashworth, S. (1990). The spectrum of teaching styles: From command to discovery. New York: Longman.

National Institute on Education (1975). Teaching as clinical information processing. Washington, DC: National Conference on Studies in Teaching.

Nelson, L. N. (1969). (Ed.). The nature of teaching: A

collection of readings. Waltham, MASS: Blaisdell.

Noll, J. W., & Kelly, S. P. (1970). Foundations of education in America: An anthology of major thoughts and

Reynolds, M. C. (1989). (Ed.). Knowledge base for the Colleges for Teacher Education.

Orr, D. W. (1992). Ecological literacy: Education and the transition to a postmodern world. Albany: SUNY Press.

Rogers, C. (1983). Freedom to learn for the 80's. Columbus, OH: Charles E. Merrill.

Ropo, E. (1987). Teachers' conceptions of teaching and teaching behavior: Some differences between expert and novice teachers. Washington, DC: Annual Meeting of the American Educational Research Association. (ERIC Document Reproduction Service No. 287 824)

Ross, D. R. (1984). An introduction to curriculum criticism. Journal of Thought, 19(2), 47-60.

Rubin, L. J. (1985). Artistry in teaching. New York: Random House.

Ryle, G. (1949). The concept of mind. Chicago: The University of Chicago Press.

Samuelowicz, K., & Bain, J. D. (1992). Conceptions of teaching held by academic teachers. Higher Education, 24(1), 93-111.

Samuelson, W. G., & Markowitz, F. A. (1986). An introduction to philosophy of education. New York: Philosophical Library.

Scardamalia, M., & Bereiter, C. (1989). Conceptions of teaching and approaches to core problems. In M. C. Reynolds (Ed.), Knowledge base for the beginning teacher (pp. 37-46). New York: American Association of Colleges for Teacher Education.

Scheffler, I. (1965). Conditions of knowledge: An introduction to epistemology and education. Chicago: The University of Chicago Press.

_____. (1966). (Ed.). Philosophy and education: Modern readings. Boston: Allyn and Bacon.

_____. (1968). The concept of teaching. In C. J. B. MacMillan, & T. W. Nelson (Eds.), Concepts of teaching: Philosophical essays (pp. 17-27). Chicago: Rand McNally.

_____. (1978). The language of education. (10th printing). Springfield, ILL: Charles C. Thomas.

_____. (1989). Reason and teaching. Indianapolis: Hackett.

_____. (1991). In praise of the cognitive emotions. New York: Routledge.

Schön, D. A. (1988). Coaching reflective teaching. In P. P. Grimmett, & G. L. Erickson (Eds.), Reflection in teacher education (pp. 19-29). New York: Teachers College Press.

Schwab, J. J. (1978). The practical: Arts of eclectic. In I. Westbury, & N. J. Wilkof (Eds.), Science,

curriculum, and liberal education: Selected essays (pp. 322-364). Chicago: The University of Chicago Press.

Seda, E. (1992). Developing a personal statement about a philosophy of education. In M. M. Dupuis (Ed.), Tradition and reform in teacher education. University Park, PA. The Pennsylvania State University. Division of Curriculum & Instruction, College of Education. (ERIC Document Reproduction Service No. ED 348 356)

_____. (1992). Educator's Conceptions of Teaching: A Qualitative Case Study. Unpublished Research Study. The Pennsylvania State University. Department of Higher Education, University Park, PA.

Sergiovanni, T. J. (1989). Science and scientism in supervision and teaching. Journal of Curriculum and Supervision, 4(2), 93-105.

Shor, I., & Freire, P. (1987). A pedagogy for liberation: Dialogues on transforming education. New York: Bergin and Garvey.

Short, E. C. (1987). Curriculum decision making in teacher education: Policies, program development, and design. Journal of Teacher Education, 38(4), 2-12.

Short, E. C. (Ed.). (1991). Forms of curriculum inquiry. Albany: State University of New York Press.

Simon, R. I. (1992). Teaching against the grain: Texts for a pedagogy of possibility. New York: Bergin and

Garvey.

Simpson, D. J., & Jackson, M. J. B. (1984). The teacher as philosopher: A primer in philosophy of education. Toronto: Methuen.

Skinner, B. F. (1968). The technology of teaching. New York: Meredith Corp.

Smith, B. O. (1956). On the anatomy of teaching. Journal of Teacher Education, 7(3), 339-346.

_____. (1963). A conceptual analysis of instructional behavior. Journal of Teacher Education, 14(3), 294-298.

_____. (1968). A concept of teaching. In C. J. B. MacMillan, & T. W. Nelson (Eds.), Concepts of teaching: Philosophical essays (pp. 11-16). Chicago: Rand McNally.

_____. (1969). Toward a theory of teaching. In L. N. Nelson (Ed.), The nature of teaching: A collection of readings (pp. 107-115). Waltham, MASS: Blaisdell.

Smith, B. O., & Ennis, R. H. (Eds.). (1961). Language and concepts in education. Chicago: Rand McNally.

Smith, F. (1991). To think. New York: Teachers College Press.

Smylie, M. A., & Conyers, J. G. (1991). Changing conceptions of teaching influence the future of staff development. Journal of Staff Development, 12(1), 12-16.

Soltis, J. F. (1965). Discussion: Teaching, acting, and behaving. Harvard Educational Review, 35(2), 191-196.

_____. (1978). An introduction to the analysis of educational concepts. (2nd ed.). Reading, MASS: Addison-Wesley.

Stiles, L. J. (1974). Theories for teaching. New York: Dodd, Mead & Co.

Strasser, B. (1967). A conceptual model of instruction. Journal of Teacher Education, 18(1), 63-74.

Tom, A. R. (1984). Teaching as a moral craft. New York: Longman.

Trumbull, D. J. (1990). Evolving conceptions of teaching: Reflections of one teacher. Curriculum Inquiry, 20(2), 161-182.

Trumbull, H. C. (1887). Teaching and teachers. Philadelphia: John D. Wattles.

Vallance, E. J. (1991). Aesthetic inquiry: Art criticism. In E. Short (Ed.), Forms of curriculum inquiry (pp. 155-172). Albany: The State University of New York Press.

Van Manen, M. (1982). Phenomenological pedagogy. Curriculum Inquiry, 12(3), 283-299.

Watt, A. J. (1973). Conceptual analysis and educational values. Educational Philosophy & Theory, 5(2), 27-37.

Wilson, J. (1969). Thinking with concepts. Cambridge, UK: The University Press.

Wittrock, M. C. (1986). (Ed.). Handbook of research on teaching. New York: MacMillan.